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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/462,631	01/11/00	YAMADA	H Q57317

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EXAMINER
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PADGETT, M

ART UNIT	PAPER NUMBER
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1762

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DATE MAILED: 07/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/462,631

Applicant(s)

Yamada et al

Examiner

M.L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 1/11/00
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-7 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some\* ☐ None of the:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 3
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

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### DETAILED ACTION

①

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The use of relative terms that lacks clear metes and bounds in the claims, or a clear definition in the specification or in cited relevant prior art, is vague and indefinite. See “hard” in Hard coating”.

In claim 1, the limitation for what the green-compact electrode is made of is a circular limitation, ie. it appears to be claimed that the electrode is made of itself, plus fluid, but since the material it's made of includes the fluid you have an infinite loop type situation. Also, “fluid which is the same as said wondering fluid” is ambiguous. Does it mean that both fluids have the same composition, or that they are the same physical entity? Claims 3 and 5-7 have like problems.

The problems of claim 1 effect claim 2 also, particularly it is unclear on what basis the ratio is calculated, <sup>ie.</sup> ~~ie.~~ wt% of fluid/material; fluid/(material + fluid); etc.. See a like problem in claim 4.

In claim 3, “a green-compact electrode” issued on all of lines 1 4 and 6, such that the 2nd and 3rd occurrences either need an article showing antecedent basis, or clear differentiation also, see lines 1, 4 and 7 of claim 7 for the same problem.

In the process of claim 4, it is unclear where the hard coating is coming from, as one does not know anything useful about the object being treated. It could be anything, wood, plastic, clay, metal, metal oxide, et... Is the hard coating a microstructure modification of the object surface? Is

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it the addition of material to form a layer? If so, from where? The working fluids? The electrode? Somewhere else? The step of using the electrode lacks context needed for clarity. Also in the last line “an electrode” is introduced with unclear relative shop to “said green-compact electrode:.. Is at what’s used for the treatment or not?

It is noted that the essential scope of claims 1, 3 and 6, all appear to be the same. They are all claiming the electrode. That claim 6, starts with “An apparatus..” does not change the fact that only the structure/construction of the electrode is claimed.

In claim 7, as phrased the “discharge surface treatment step” (lines 13-15) have no necessary relationship to the “compression molding step” of lines 9-12, since “an electrode” can be any compression molded electrode. In lines 16-17 “said electrodes” (plural) lacks proper antecedent basis, as well a clarity to which electrode (s) it might be referring to. It is also noted, that while the last 2 lines come after the pulverizing step, the powder formed therein is NOT used in anything, including the molding step. The order implies some intent to use to the powder in the molding process, but never actually does so. Likewise, the treatment step implies that applicant’s electrode are consumable electrode, therefore possible sources of the hard material, but nothing in the claims actually has anything to do with such concepts.

②

The disclosure is objected to because of the following informalities: Proofreading in the specification is reconvinced; especially for non-idiomatic English.

Appropriate correction is required.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 3 and 6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by

Vignaud.

Vignaud teaches making electrodes by compression molding of a dry mixture containing a conducting compound such as graphite, a catalytically active compound (eg. Ag catalized C) ~~PTEF~~ ~~PER~~ fibers, all mixed with a lubricant such as kerosene or an oil. Vignaud teaches applicability to electrodes generally, and those for electrochemical generators particularly. See the abstract; col. 3, lines 1-52, esp 49-50 and 21-23; and col. 4, lines 43-68. Note that the claimed structure of the electrode is completely conred, and that for product claims it is NOT necessary for the intended end use to be taught, just the claimed structure.

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Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vignaud.

Vignaud does not provide a teaching on the possible useful ranges of amounts of lubricant useful for his pastes, although the example 1 works out to be about 24 to 25% by

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weight of lubricant, however the working procedure 9 col. 5, lines 4-6) would be expected not remove any lubricant on the surface, however the exact basis of applicant's percentages is unclear as noted above. It would have been obvious for one of ordinary skill in the art, to adjust the percentages of lubricant employed, according to its viscosity and the amounts of different dry materials employed, in order to produce a paste of useful consistency.

⑥ Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vignaud *as applied in claims 1-4 and 6, and further in view of Magara et al.* *As Noted,* Vignaud does not particularly specify that his graphite electrode may be used as the electrode ~~in~~ <sup>operations</sup> electric discharge ~~op~~, however Magara et al (abstract; figures; col. 2, lines 16-28) show that graphite electrodes are known for use in producing wear resistant (hard) coatings and that they are known to be consumed. It would have been obvious to one of ordinary skill in the art to use a graphite electrode for a process it is known to perform, ~~ie~~ <sup>ie</sup> electric discharge treatments. As is also noted in magara et al, Kerosene (a lubricant used by Vignaud) is an ordinary mineral oil used in such discharge process (col. 6, lines 10-11 and 48-49). It would have been further obvious to one of ordinary skill in the art, that when one used an electrode to the point where it function has degenerated from consumption, to replace it, in order to maintain quality of ones out put. It would have been further obvious to replace the electrode with the same type one has been using, ~~ie~~ <sup>ie</sup> the steps of making it can be essentially said to have been repeated. What one does to the removed electrode will depended on its condition, economics and ones resources. It would have been obvious to crush used electrodes for either disposed processing or for recovery of reasonable

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components, but applicants claims as written do not do anything but pulverize the remains. The claims don't use the powder produced for anything!

(7) The <sup>patents</sup> parts to Saito et al are cited for further teachings of green compact electrodes in electric discharge machining (EDM), as well as mention of graphite electrodes. Gutnajer teaches making an EDM graphite electrode from powder using binder materials inclusion of oil, but those the compression molded shapes are also sincere.

Rhodes is of interest for teaching remaking graphite electrodes that are of a machinable variety, so that they may be reused. Pinkahsonteaches that crystallin Si electrodes are highly frangible material, but shows that of that natural is broken in to large mactropartiels and bonded to form an electrode it is advantageous as applied to claim above, and further in view of.

(S) Any inquiry concerning this communication should be directed to M.L. Padgett at telephone number (703) 308-2336 on Mondays-Fridays from about 8 am-4:30 pm, and Fax # (703) 305-5408 (official) and 305-6078 (unofficial).

MPadgett:evh

07/17/01



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